

## Genus *Arrhenophagus* Aurivillius (Hymenoptera, Encyrtidae) New to Korea

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**Abstract** The genus *Arrhenophagus* Aurivillius comprising one species, *A. chionaspidis* Aurivillius is reported for the first time from Korea.

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**Key words** Chalcidoidea, Encyrtidae, *Arrhenophagus*, *A. chionaspidis*, Systematics, new record, Korea

### INTRODUCTION

The genus *Arrhenophagus* Aurivillius belonging to tribe Arrhenophagini of the subfamily Encyrtinae, was established by Aurivillius in 1888. Two species has been known to be valid to date: *A. chionaspidis* Aurivillius, 1888 and *A. albitibiae* Girault, 1915. Annecke and Prinsloo (1974) provided a good revision for the genus. The species of *Arrhenophagus* resemble those of *Arrhenophagoidea* Girault, 1915, and the species of both genera are of minute size, ranging in length around 0.5 mm, and the specimens tend to shrivel badly when dried, but these two genera can be easily distinguished by the tarsi: four-segmented in *Arrhenophagus* and five-segmented in *Arrhenophagoidea* (Annecke and Prinsloo, 1974). The genus *Arrhenophagus* is widespread in distribution and the species are exclusively parasitic on armored scale insects.

In this paper, the genus *Arrhenophagus*, comprising one species, *A. chionaspidis*, is reported for the first time from Korea. All the material examined are now preserved in the Entomological Collection of Korea National Arboretum.

#### *Arrhenophagus* Aurivillius 무연맥강충좀벌속 (新稱)

*Arrhenophagus* Aurivillius, 1888: Ent. Tidskr. 9: 144. Type-species: *Arrhenophagus chionaspidis* Aurivillius, by monotypy. Tachikawa, 1963: 240.

*Mymariella* Risbec, 1951. Inst. Fr. Afr. Noire, Mem. 13: 402. Type-species: *Mymariella parlatoreae* Risbec, by monotypy. Annecke & Insley, 1971: 6.

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**Diagnosis.** Female: Antenna with 2–4 anelliform segments that are adpressed with clava; clava large, at least as long as remainder of antenna; mandible with a single pointed tooth; axillae distinct, meeting mesally; forewing broad, at most two and one-quarter times as long as broad, with marginal fringe much shorter than maximum wing width, the longest cilia at most not much longer than setae on submarginal vein. Tarsi four-segmented.

**Hosts.** Diaspididae (Homoptera).

**Distribution.** New World, Palaearctic, Afrotropical, Oriental and Pacific.

***Arrhenophagus chionaspidis* Aurivillius** 각지벌레무연맥강충좀벌 (新稱)

(Figs 1, 2)

*Arrhenophagus chionaspidis* Aurivillius, 1888. Ent. Tidskr. 9: 146; Annecke & Prinsloo, 1974. J. ent.

Sco. sth. Afr. 37 (1): 36–38; Hayat, 1979. J. Nat. Hist. 13: 317.

*Coccobius diaspidis* Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 408.

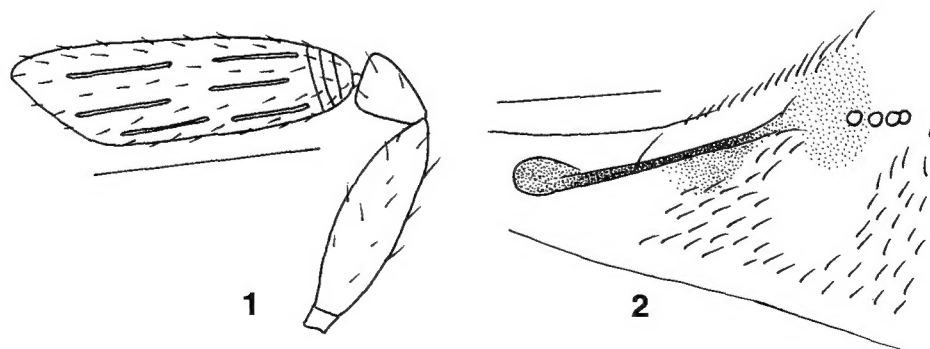
*Mymariella parlatores* Risbec, 1951. Mem. Inst. fr. Afr. noire 13: 402–403.

*Arrhenophagus diaspidiatus* Agarwal, 1963. Z. Parasitkde, 22: 394.

*Arrhenophagus intermedius* Blanchard in De Santis, 1964. An. Comn. Invest. cient. Prov. B. Aires 4: 40–41.

*Arrhenophagus parlatores* (Risbec), Annecke & Insley, 1971. Entomology Mem. Dep. agric. tech. Serv. Repub. S. Afr. 23: 6, 37.

**Description.** Female: Body dark brown. Antennae, ocelli, tegula, and legs yellowish brown, hind femora pale brown. Eyes nearly round, hairless; gena longer than eye length; mandible relatively long and narrow; clypeal margin of mouth strongly emarginated at base of each mandible; maxillary palpi two segmented and labial palpi one segmented. Antenna (Fig. 1) five segmented, three funicle segments narrow, anelliform; clava large, unsegmented. Mesonotum and axillae reticulate, scutellum protrudent posteriorly with fine sculpture. Forewing hyaline, about two times as long as its own maximum width, marginal fringe short. Marginal, postmarginal, and stigmal veins absent, only with trace on original place (Fig. 2). Tarsi four segmented and all tarsal segments rather short; middle tibial spur nearly as long as the



**Figs 1-2.** 1. Female antenna of *Arrhenophagus chionaspidis* Aurivillius; 2. ditto, base of forewing. [Scales: 100  $\mu$ m]

length of corresponding basitarsus. Abdomen slightly shorter than thorax, with fine sculpture, ovipositor about two-thirds length of middle tibia.

Body 0.4–0.6 mm long.

Male. Unknown.

*Material examined.* 2 ♀, Suwon City, Gyeonggi-do, 2 VIII 2001, ex *Pseudaulacaspis cockerelli* (Cooley) on *Taxus cuspidata* S. et Z.

*Hosts.* *Pseudaulacaspis cockerelli* (Cooley). According to the literatures, it also parasite on: *Acanthococcus aceris* Signoret, *Aspidiotus hederae* Vallot, *Aulacaspis rosae* Borchsenius, *A. tegalensis*, *A. yabunikkei* Kuwana, *Chionaspis salicis* (Linnaeus), *Contigaspis* sp., *Diaspis rosae* L., *Fiorinia pinicola* Maskell, *F. saprosciae* Green, *F. vaccinae* Kuwana, *Furchadiaspis zamiae* Morgan, *Hemiberlesia pitysophila* Takagi, *Parlatoria ziziphi* Lucas, *Phenacaspis cockerelli* Cooley, *Pinnaspis aspidistrae* (Signoret), *P. strachani* (Cooley), *Pseudaulacaspis pentagona* (Targioni-Tozzetti), *Quadraspidotus ostreaeformis* Curtis, *Q. forbesi* Johnson, *Q. perniciosus* Comstock, *Saissetia nigra* Nietner, *Unaspis citri* (Comstock), *U. yanonensis* (Kuwana).

*Distribution.* Cosmopolitan; Korea (Gyeonggi), Japan, China, India, Sri Lanka, Ceylon, Europe, Madeira, N. Africa, N. America, S. America, Australia. Hawaii, New Zealand.

*Remarks.* This species is very close to *A. albitibiae* Girault, but can be distinguished by strongly emarginated clypeal margin of mouth at base of each mandible, and relatively short ovipositor. It has so far been known that the male of *A. chionaspidis* is extraordinary rare. Howard (1898) and Hoffer (1964) said the male with antennal funicle four-segmented whereas Tachikawa (1957, 1963) described as six-segmented.

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